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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL COMMITTEE

Fiftieth Session
Geneva, April 7 to 9, 2014

ADDENDUM

REVISION OF DOCUMENT TGP/8: PART II: SELECTED TECHNIQUES USED IN DUS EXAMINATION, SECTION 9: THE COMBINED-OVER-YEARS UNIFORMITY CRITERION (COYU)

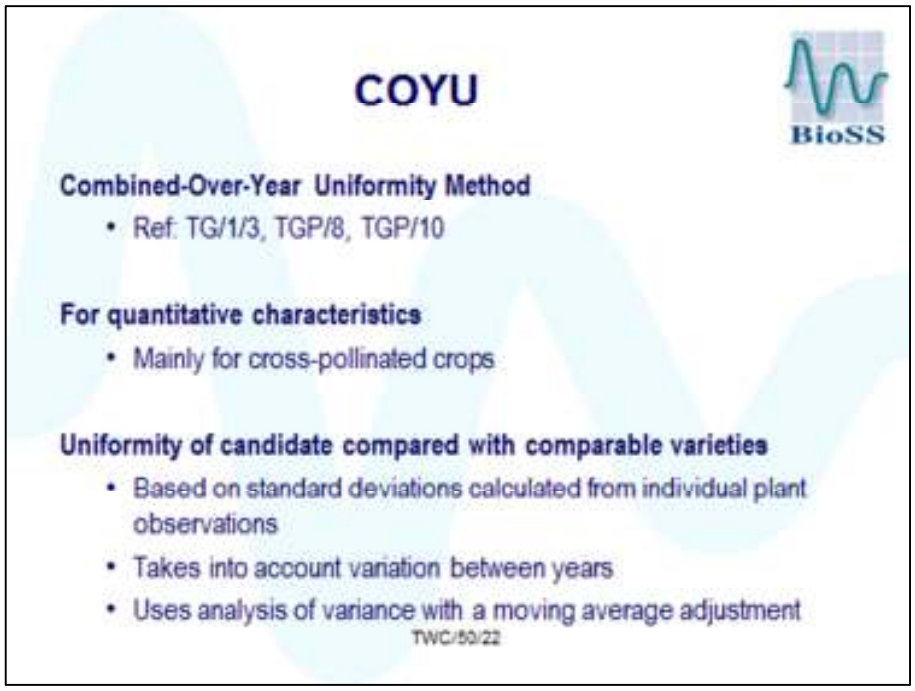
Document prepared by the Office of the Union

Disclaimer: this document does not represent UPOV policies or guidance

The Annex to this document contains a copy of a presentation about proposed improvements to the COYU method (in English only).

[Annex follows]

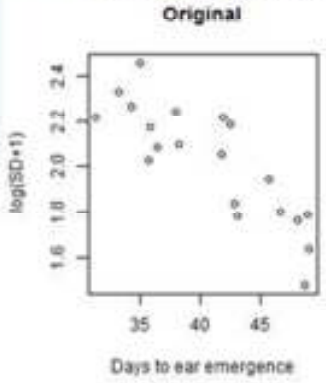

BioSS
Proposed Improvements to COYU
Adrian Roberts
United Kingdom
TWC/50/22


COYU
BioSS
Combined-Over-Year Uniformity Method
• Ref: TG/1/3, TGP/8, TGP/10
For quantitative characteristics
• Mainly for cross-pollinated crops
Uniformity of candidate compared with comparable varieties
• Based on standard deviations calculated from individual plant observations
• Takes into account variation between years
• Uses analysis of variance with a moving average adjustment
TWC/50/22

Adjustment

Variability of measurements often depends on level of expression

- So an adjustment is used to compensate
- Currently the method used is ***Moving Average***



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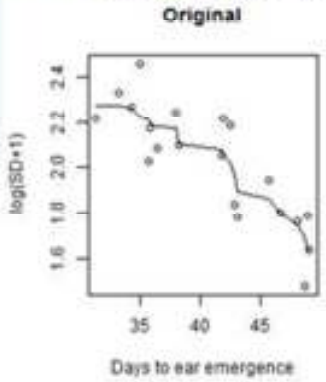

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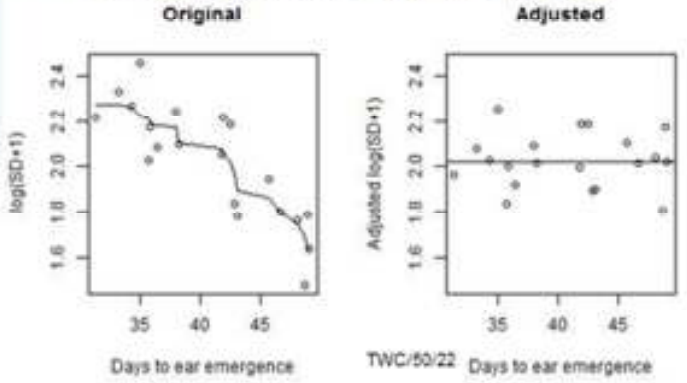


Concern with current COYU method

Shown that the current method rejects more varieties than it should

- In examples in TWC/27/15, rejection rate was more than 2 times expected

This is due to the method of adjustment (moving average)

In practice, this seems to be partially compensated for by use of smaller probability levels than usual

- Typical probability level for COYD is 1%
- Typical probability level for COYU is 0.1%

TWC work on improving COYU

BioSS

Considered various alternative methods of adjustment

- Needs to fit relationships between variation and level of expression well
- No bias problem

Method called "cubic smoothing spline" was found to be suitable

- Flexibility constrained to 4 effective degrees of freedom

This was demonstrated at TWC last year

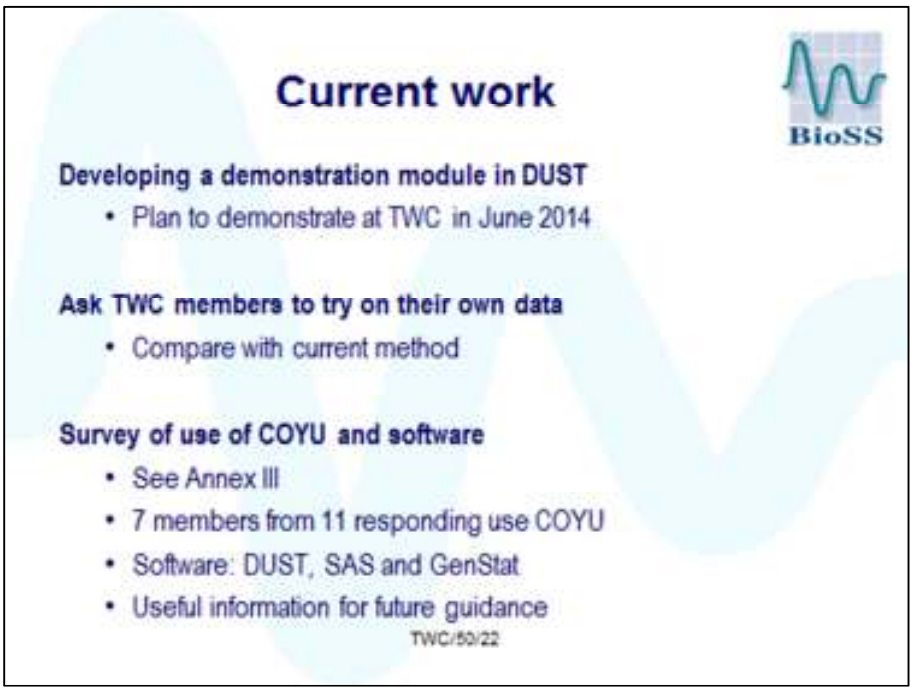
- *R* software

Issues arising

BioSS

Key issues to deal with:

- **Choice of probability levels**
  - Optimise to match decisions with current approach?
- **When a new variety has a level of expression outside that seen in comparable varieties**
  - Also an issue for the current COYU
- **Minimum number of varieties required for COYU**
  - Easier than with moving average



[End of Annex and of document]